


FEMCard analysis result

20.10.15


Project data	
Projectname	visco_small_strain
Folder	F:\tmp_del\Demo_Projects\A_isotropic_material\D_viscoelasticity_small_strain\incompressible_
Created at	08.06.2015
Maker	Parsolve GmbH
Comment	Synthetic measurement data
Material model	ISOTR SMALL strain VISCOELASTICITY, 5 relaxation modules

Test informations


Test 1

Color	
Number	1
Name	Relaxation_Test_1_Uniax
Folder	F:\A_synth_meas\A_isotropic_material\D_viscoelasticity_small_strain\incompressible_material\Relaxation
Load type	Isotropic time-dependent SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.13043

Test 2


Color	
Number	2
Name	Relaxation_Test_2_Uniax
Folder	F:\A_synth_meas\A_isotropic_material\D_viscoelasticity_small_strain\incompressible_material\Relaxation
Load type	Isotropic time-dependent SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1

Test 3

Color	
Number	3
Name	Cyclic_1_Uniax
Folder	F:\A_synth_meas\A_isotropic_material\D_viscoelasticity_small_strain\incompressible_material\Cyclic_1_U
Load type	Isotropic time-dependent SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.06477

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Test 4	
Color	
Number	4
Name	Cyclic_2_Uniax
Folder	F:\A_synth_meas\A_isotropic_material\D_viscoelasticity_small_strain\incompressible_material\Cyclic_2_L
Load type	Isotropic time-dependent SMALL strain UNIAXIAL axial stress vs. axial strain
Weight T	1.06477

Tests weight TR

Test 1		
Start	End	Value
0	50	4
51	100	1.33
101	150	1
151	200	1
201	250	1
251	300	1

Test 2		
Start	End	Value
0	50	4
51	100	1.33
101	150	1
151	200	1
201	250	1
251	300	1

Test 3		
Start	End	Value
0	23	3.48
24	73	1.53
74	123	1.53
124	173	1.53
174	223	1.53
224	300	1

Test 4		
Start	End	Value
0	23	3.48

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24	73	1.53
74	123	1.53
124	173	1.53
174	223	1.53
224	300	1

Tests weight SD

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Model parameter					
Parameter	Fix	Lower limit	Upper limit	Start value	Result
E		10	1000	50	502.056
PR	x	1e-05	0.499	0.499	0.499
g_1		0.0001	0.8	0.12	0.1901691
tau_1		0.0001	5	0.3	0.5449837
g_2		0.0001	0.7	0.08	0.1481558
tau_2		0.0001	20	1	1.356079
g_3		0.0001	0.7	0.07	0.1248143
tau_3		0.0001	100	10	11.86653
g_4		0.0001	0.4	0.02	0.1037944
tau_4		0.0001	1000	100	172.2178
g_5		0.0001	0.4	0.01	0.03378897
tau_5		0.0001	3000	1000	880.1541

Processing parameter	
Max. number of steps	200
LM start value	0.1
Max. error sum of squares	1e-05

Processing results	
Steps	8
Least squares sum	9.81401e-06

Correlation matrix												
	E	PR	g_1	tau_1	g_2	tau_2	g_3	tau_3	g_4	tau_4	g_5	tau_5
E	1	0	-0.802	-0.87	0.824	-0.714	0.356	-0.29	-0.0571	-0.0906	0.0488	-0.0438
PR	0	1	0	0	0	0	0	0	0	0	0	0
g_1	-0.802	0	1	0.987	-0.997	0.978	-0.689	0.525	0.0921	0.181	-0.112	0.091
tau_1	-0.87	0	0.987	1	-0.992	0.937	-0.605	0.462	0.0821	0.155	-0.0934	0.0774
g_2	0.824	0	-0.997	-0.992	1	-0.961	0.639	-0.47	-0.0797	-0.152	0.0921	-0.076
tau_2	-0.714	0	0.978	0.937	-0.961	1	-0.806	0.633	0.114	0.233	-0.148	0.119
g_3	0.356	0	-0.689	-0.605	0.639	-0.806	1	-0.781	-0.0622	-0.205	0.115	-0.086
tau_3	-0.29	0	0.525	0.462	-0.47	0.633	-0.781	1	0.31	0.613	-0.429	0.337
g_4	-0.0571	0	0.0921	0.0821	-0.0797	0.114	-0.0622	0.31	1	0.881	-0.977	0.96
tau_4	-0.0906	0	0.181	0.155	-0.152	0.233	-0.205	0.613	0.881	1	-0.944	0.842
g_5	0.0488	0	-0.112	-0.0934	0.0921	-0.148	0.115	-0.429	-0.977	-0.944	1	-0.914

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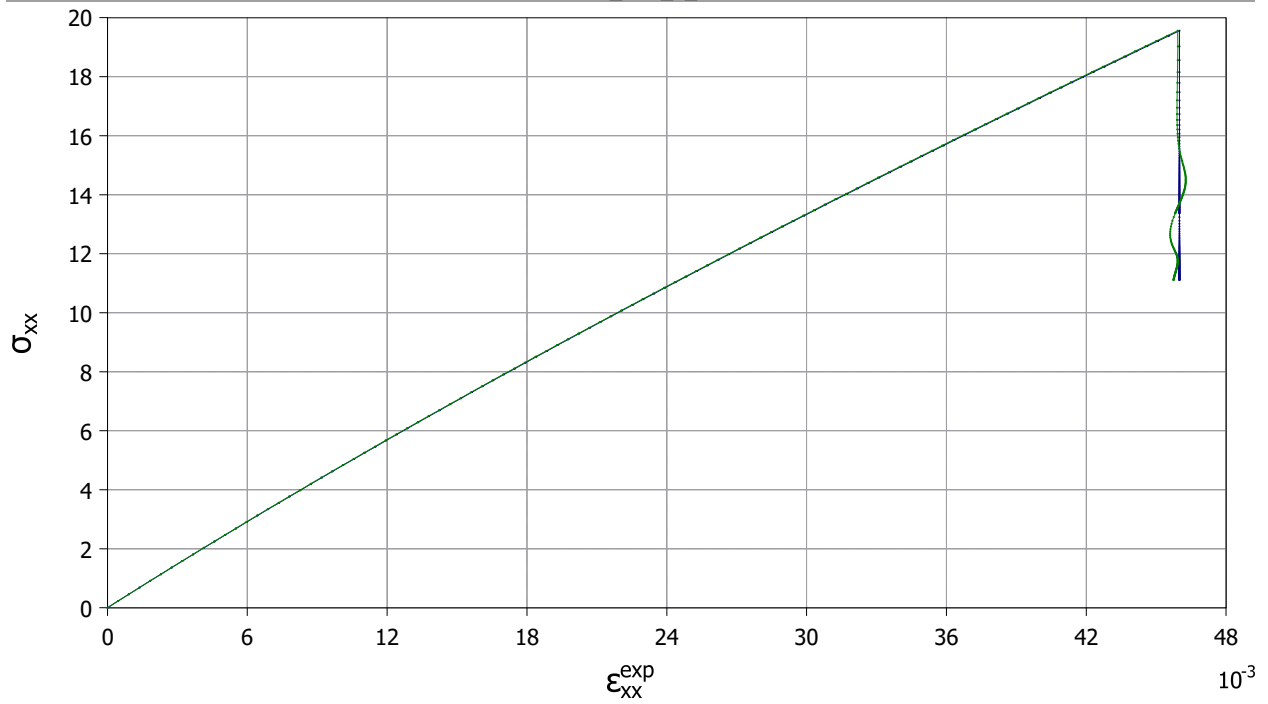
tau_5	-0.0438	0	0.091	0.0774	-0.076	0.119	-0.086	0.337	0.96	0.842	-0.914	1
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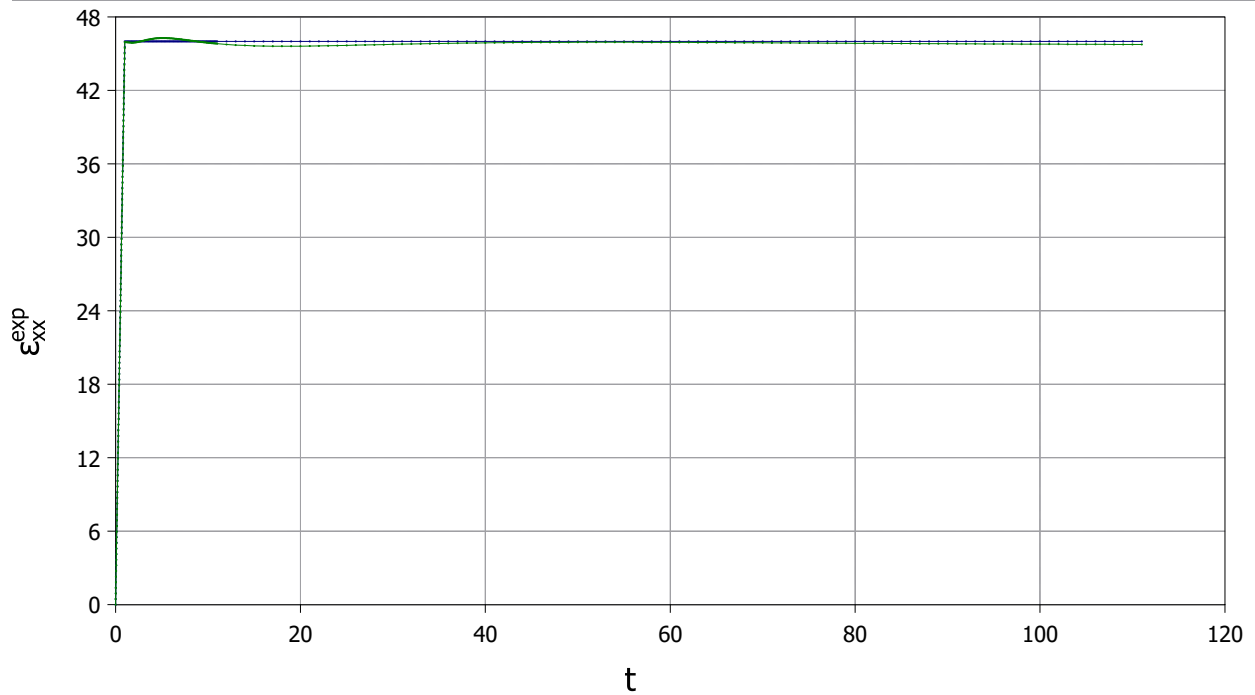
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Verification

Relaxation_Test_1_Uniax

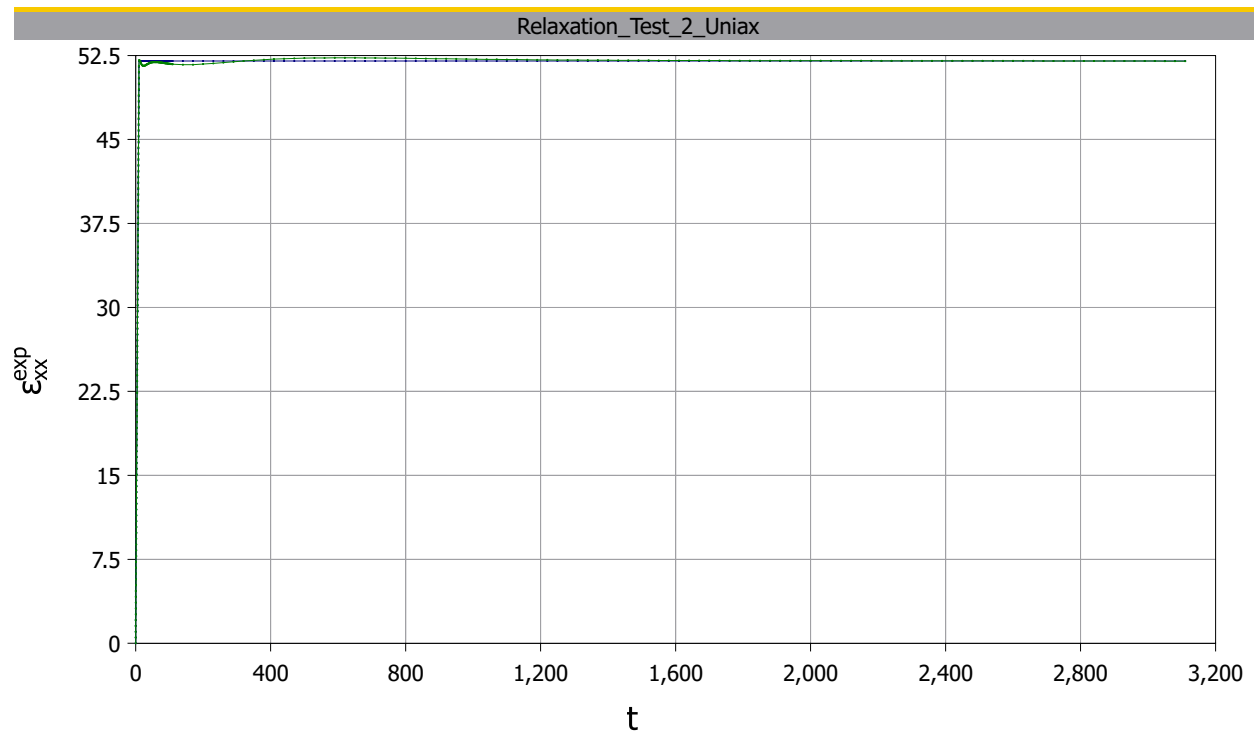
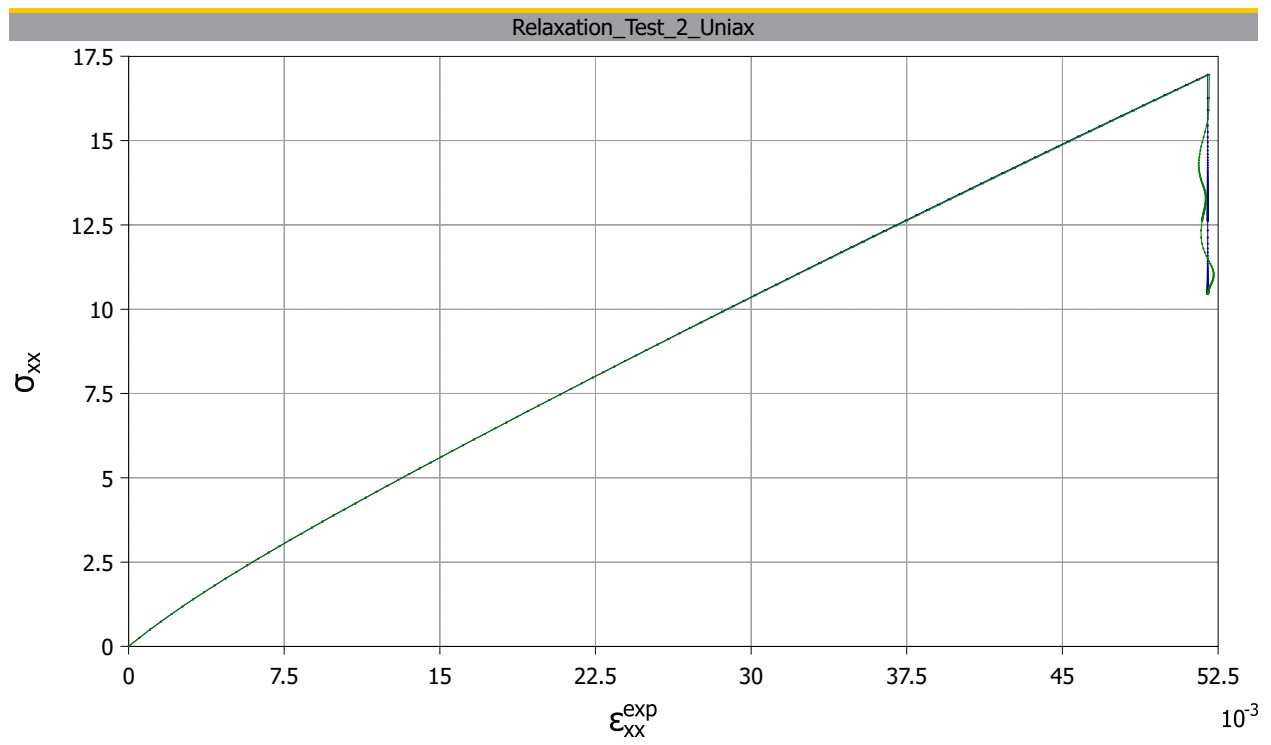


Relaxation_Test_1_Uniax



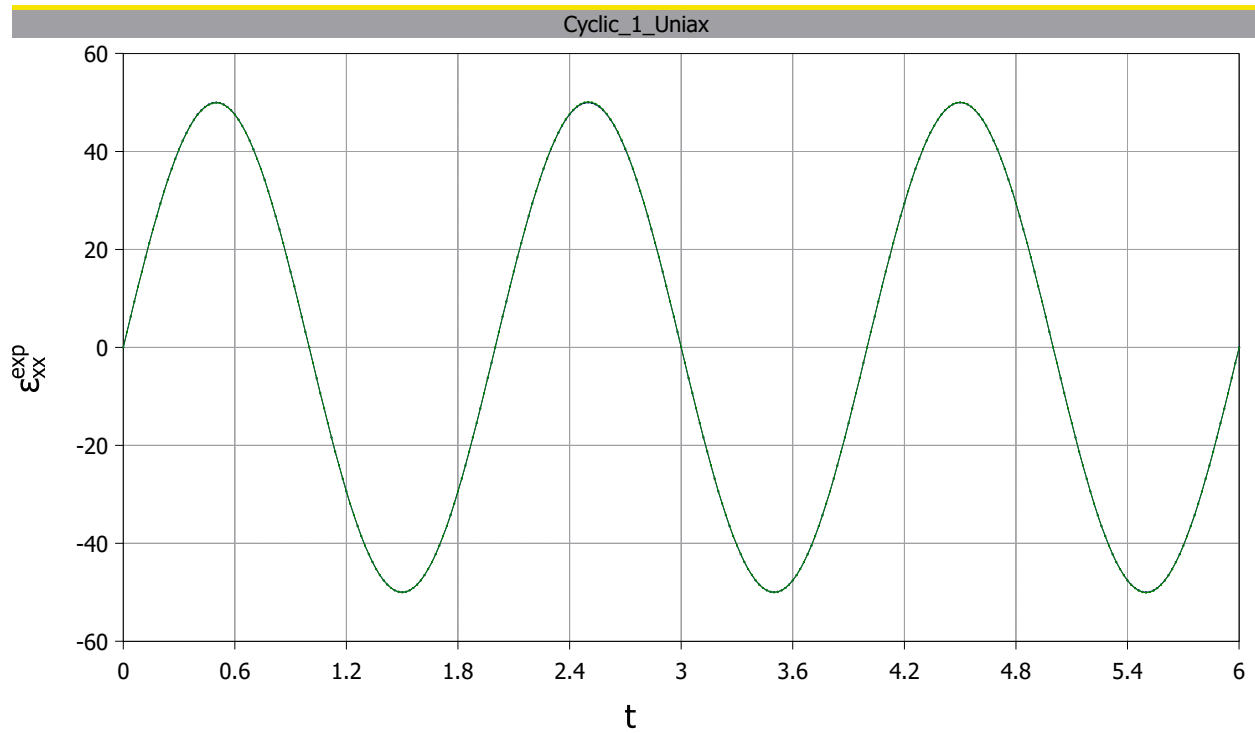
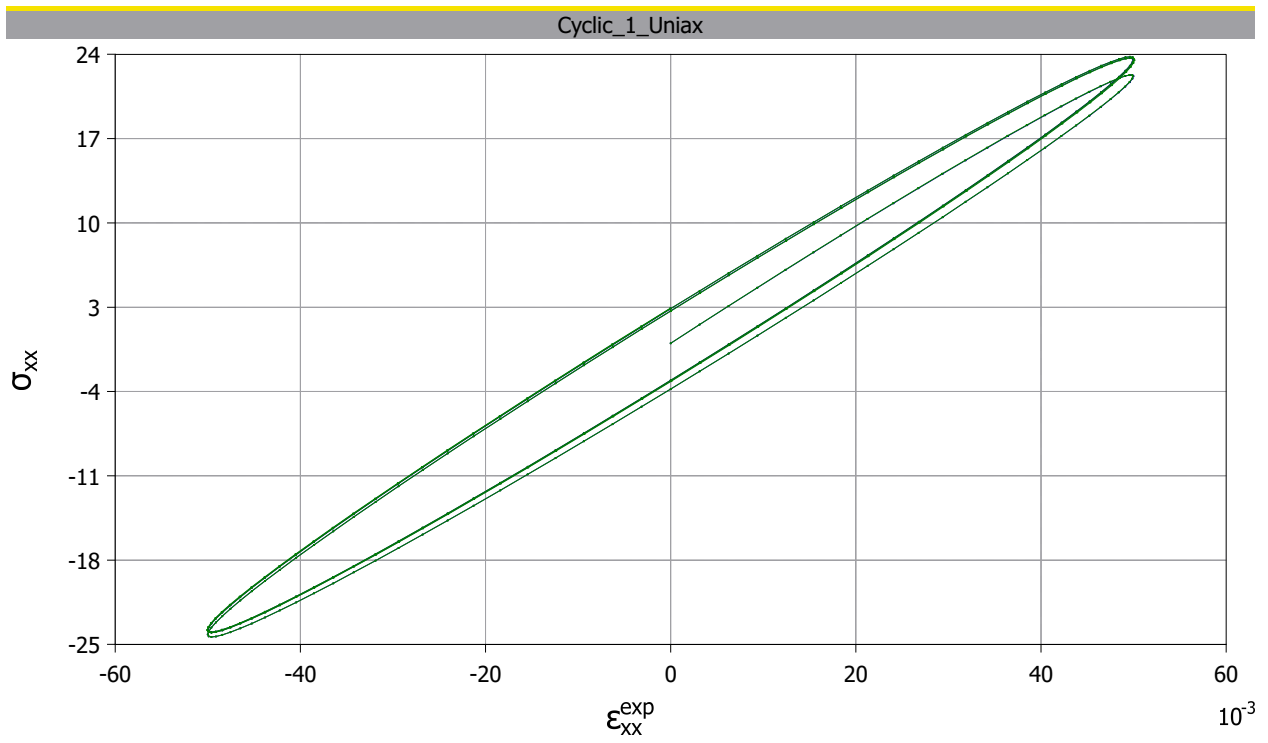
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